

# Hot Weather Casualties and Injuries Chart



- Train commanders and soldiers on heat injury prevention and heat risk assessment
- Remember the acronym **H-E-A-T** when training in hot weather (**H**: heat category; **E**: exertion level; **A**: acclimatization; **T**: time of heat exposure & recovery time)
- Follow recommended fluid replacement guidelines and ensure nutritional requirements are met

## Sunburn

- Cause**
- Exposure of skin to direct sun
  - Can occur on overcast days
- Symptoms**
- Red, hot skin
  - May blister
  - Moderate to severe pain
  - Can result in fever
- First-Aid**
- Move to shade; loosen clothing if necessary
  - Apply cold compress or immerse in cool water
  - Apply moisturizing lotion to affected areas
  - Hydrate with fluids
  - Administer analgesics for pain or fever
  - Do not break blisters
- Prevention**
- Adequate sun protection
  - Use sunscreen liberally and apply often, especially when sweating excessively
  - Select SPF 15 or higher
  - Proper wear of clothing, cap

## Heat Rash (Prickly Heat)

- Cause**
- Restrictive clothing
  - Excessive sweating
  - Inadequate hygiene
  - Causes heat intolerance if 20% of skin affected
- Symptoms**
- Red, itchy skin
  - Bumpy skin due to blocked pores
  - Moderate to severe itching
  - Can result in infection
- First-Aid**
- Apply cold compress or immerse in cool water
  - Keep area affected dry
  - Control itching and infection with prescribed medications
- Prevention**
- Proper wear of clothing
  - Shower (nude) after excessive sweating

## Heat Exhaustion

- Cause**
- Body fatigue and strain on heart due to overwhelming heat stress
  - Dehydration (see below)
  - Inadequate acclimatization
  - Inadequate physical fitness for the work task
  - Most common exertional heat illness
- Symptoms**
- Dizziness
  - Fatigue
  - Weakness
  - Headache, nausea
  - Unsteady walk
  - Rapid pulse
  - Shortness of breath
- First-Aid**
- Initiate active cooling by best means available
  - Move to shade and loosen clothing
  - Lay flat and elevate feet
  - Spray/pour water on soldier and fan for cooling effect or use ice sheets around neck, arm pits and groin, if available
  - Monitor with the same (one) instructor or supervisor
  - Assess soldier's mental status every few minutes
  - Have soldier slowly drink one full canteen (quart) of cool water every 30 minutes with a maximum of 2 canteens
  - If not improved in 30 to 60 minutes, evacuate for further medical care
  - NOTE: Those who recover within 60 minutes should return to light duty on a profile for the remainder of the day
- Prevention**
- Allow for acclimatization
  - Monitor WBGT
  - Keep soldiers in shade whenever possible
  - Follow water replacement guides
  - Observe work-rest cycles
  - Identify high risk individuals
  - Maintain buddy system
  - Eat all meals in garrison and field
  - Do not take dietary supplements
  - Modify uniform accordingly
  - Teach early recognition of symptoms
  - Recognize cumulative effect of sequential hot days
  - Reevaluate training mission if several mild heat injuries occur

## Heat Cramps

- Cause**
- Excessive loss of salt from body due to excessive sweating
  - Not acclimatized to hot weather
- Symptoms**
- Painful skeletal muscle cramps or spasms
  - Mostly affects legs and arms
- First-Aid**
- Replace salts
  - Sit quietly in the shade or cool area
  - Massage affected muscle
  - Drink oral rehydration package or sports drink
  - Drink 0.05 to 0.1% salt solution (add ¼ of MRE salt packet to 1 quart canteen)
  - Get medical evaluation if cramps persist
- Prevention**
- Eat all meals to replace salt
  - Consume salt-supplemented beverages if adequate meals have not been consumed prior to prolonged periods of heavy sweating
  - Ensure adequate heat acclimatization

## Heat Stroke

- Cause**
- Prolonged exposure to high temperatures
  - Cumulative heat stress due to repetitive activity in hot environment
  - Failure of body's cooling mechanisms
  - Prolonged and overwhelming heat stress
  - Predisposing factors such as sickness, poor health or certain medications
- Symptoms**
- Any of above symptoms for heat exhaustion, but more severe
  - Nausea, vomiting
  - Altered mental status w/agitation, confusion, delirium, disorientation
  - Elevated temperature, usually above 104° F
  - Can progress to loss of consciousness, coma, and seizures
- First-Aid**
- This is a **medical emergency** and can lead to death! **Evacuate** soldier to a medical facility immediately!
  - **Begin cooling aggressively.** Body temperature that does not go below 100° F with active cooling or ANY mental status changes calls for immediate evacuation
  - Initiate measures for heat exhaustion
  - Apply ice packs or iced sheets
  - Assess soldier's mental status every few minutes
  - If conscious, give sips of cool water while waiting for evacuation or ambulance
  - Do not give water to unconscious soldier
  - If possible, measure body temperature
  - Monitor airway and breathing
  - If medic or CLS is present, start intravenous (IV) fluids but limit to 500 ml NS or LR
  - Continue cooling process during transport (until body temperature reaches 100° F or shivering starts)
- Prevention**
- Follow measures for heat exhaustion
  - Plan medical support for heat intensive operations
  - Ensure appropriate Evacuation capabilities available
  - Ensure Preventive Medicine personnel and measures are in place

### Additional Medical Considerations in the Hot Weather Environment:

## Dehydration

- Cause**
- Depletion of body fluids and possibly salt
- Symptoms**
- Dizziness
  - Weakness and fatigue
  - Rapid pulse
- First-Aid**
- Replace lost water and salt
  - Water should be sipped, not gulped
  - Get medical treatment
- Prevention**
- Drink 3-6 quarts of fluid per day
  - Do not take dietary supplements
  - Consume full meals and drink at mealtime
  - Follow fluid replacement guidelines

## Over Hydration (Hyponatremia)

- Cause**
- Over hydration or water intoxication
  - Decreased meals or dieting
  - Loss of body salt
  - Misdiagnosis and treatment for dehydration
- Symptoms**
- Confusion
  - Weakness
  - Nausea, vomiting
- First-Aid**
- Replace salt loss
  - Follow measures for heat exhaustion
  - If symptoms persist or become more severe with rehydration, immediate evacuation
- Prevention**
- Follow fluid replacement guidelines
  - Replace lost salt by consuming meals and sports drinks, as directed
  - Provide snacks or carbohydrate electrolyte beverage during long training events
  - Do not take dietary supplements